December 21, 1999

Mr. R. P. Powers
Senior Vice President
Nuclear Generation Group
American Electric Power Company
500 Circle Drive
Buchanan, MI 49107-1395

SUBJECT: NRC INSPECTION REPORT 50-315/99023(DRS); 50-316/99023(DRS)

Dear Mr. Powers:

On October 28, 1999, the NRC completed an inspection at your D. C. Cook Units 1 and 2 reactor facilities. The inspection addressed Case Specific Checklist Items No. 4A, “Failure to Perform Safety Evaluations or Screenings”, and No. 4B, “Inadequate Safety Evaluations”, which were established through NRC’s Manual Chapter 0350, “Staff Guidelines for Restart Approval”. This inspection assessed corrective actions to address significant deficiencies identified relative to your I0 CFR 50.59 safety evaluation program and its implementation. The enclosed report documents the results of the inspection.

Based on the results of this inspection, major improvements were noted regarding the implementation of the 10 CFR 50.59 safety evaluation program at D. C. Cook. We observed that process improvements, close management oversight, and good quality training contributed to the performance improvements. As a result, the NRC concluded that corrective actions for Case Specific Checklist Restart Item No. 4A, “Failure to Perform Safety Evaluations or Screenings”, were adequate to support closure of this item. We also understand that you will continue with personnel training, oversite and assessments of this area after restart to ensure sustained improvements.

Regarding Case-Specific Checklist Item No. 4B, “Inadequate Safety Evaluations”, our review confirmed that safety evaluations and screenings have been adequately completed. The adequacy of these work products has been dependent on the involvement of the Nuclear Safety Assessment Team (NSAT) in-line review function. We understand that the NSAT review function will remain in place through plant restart until your staff demonstrates consistently the ability to produce quality safety screenings and evaluations. Based on the effectiveness of your programs and processes to produce adequate safety evaluations and screenings, we consider your actions to address Case Specific Checklist Item No. 4A adequate to support closure of this item.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice", a copy of this letter, the enclosure, and your response to this letter, if you choose to provide one, will be placed in the NRC Public Document Room.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

Original signed by: John A. Grobe

John A. Grobe, Director
Division of Reactor Safety

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

Enclosure: Inspection Report 50-315/99023(DRS); 50-316/99023(DRS)

cc w/encl: A. C. Bakken III, Site Vice President
J. Pollock, Plant Manager
M. Rencheck, Vice President, Nuclear Engineering
R. Whale, Michigan Public Service Commission
Michigan Department of Environmental Quality
Emergency Management Division
MI Department of State Police
D. Lochbaum, Union of Concerned Scientists

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REGION III

Docket Nos:	50-315; 50-316
License Nos:	DPR-58; DPR-74
Report No:	50-315/99023(DRS); 50-316/99023(DRS)
Licensee:	Indiana Michigan Power Company
Facility:	Donald C. Cook Nuclear Generating Plant
Location:	1 Cook Place Bridgman, MI 49106
Dates:	September 13 - October 28, 1999
Inspectors:	Z. Falevits, Reactor Engineer, Team Leader D. Jones, Reactor Engineer R. Langstaff, Reactor Engineer D. Schrum, Reactor Engineer T. Tella, Reactor Engineer
Approved by:	Gary L. Shear, Chief, Plant Support Branch Division of Reactor Safety

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EXECUTIVE SUMMARY

D. C. Cook, Units 1 and 2
NRC Inspection Report 50-315/99023(DRS); 50-316/99023(DRS)

By NRC letter dated September 17, 1999, the NRC transmitted the updated Case Specific Checklist (CSC) for the Donald C. Cook Nuclear Power Plant which identified specific issues requiring resolution prior to restart of the Cook Plant.

This special inspection focused on licensee corrective actions for resolution of CSC items 4A, "Failure to Perform Safety Evaluations or Screenings", and No. 4B, "Inadequate Safety Evaluations". The standard applied to evaluate the acceptability for resolution of these CSC items was that described in paragraphs C.1.1 "Root Cause Determination", C.1.2 "Corrective Action Development", and C.1.3 "Corrective Action Plan Implementation and Effectiveness", as described in the enclosures of the NRC letter transmitting the CSC. Based on this inspection CSC Item No. 4A, "Failure to Perform Safety Evaluations or Screenings", and CSC No. 4B, "Inadequate Safety Evaluations", will be closed.

Open items identified in NRC inspection reports and Licensee Event Reports requiring resolution prior to restart of the Cook Plant have been identified in the Restart Action Matrix (RAM) approved by the NRC Manual Chapter 0350 Oversight Panel. In the RAM, open items were identified with a higher inspection priority. The higher inspection priority issues and a sample of lower priority inspection issues received a more in-depth review during this inspection. Based on adequate corrective actions for resolution of items selected for more in-depth review, reasonable assurance exists that corrective actions for similar lower priority inspection issues are adequate. The intent of selecting a sample of items for more in-depth review was to improve the efficiency of the NRC in assessing the restart readiness of D. C. Cook and to ensure appropriate focus on the issues most important from a safety and probabilistic risk perspective.

Engineering

- 10 CFR 50.59 Safety Screenings and Safety Evaluations were thorough and appropriate for the plant changes reviewed. Changes requiring 10 CFR 50.59 Safety Evaluations were appropriately identified. Determinations for whether changes represented Unreviewed Safety Questions were correct with appropriate justification. (Section E1.1)

- The team concluded that the actions taken by the licensee to address 10 CFR 50.59 bypass mechanisms were appropriate. (Section E1.2)

- The licensee's corrective actions to improve the quality of safety instructions have not been fully effective. Nuclear Safety Assessment Team review of 40 condition reports identified a significant number of 10 CFR 50.59 Safety Evaluations that were inadequate or failed to identify Unreviewed Safety Questions. The licensee had not consistently used the Nuclear Safety Assessment Team results to identify where additional 10 CFR 50.59 training and program improvements were needed. (Section E1.3)

- The team concluded that the Nuclear Safety Assessment Team process was a significant factor in improving the quality of the 10 CFR 50.59 Safety Screenings and Safety Evaluations. The Nuclear Safety Assessment Team members were broadly experienced and qualified. (Section E1.4)

- The team concluded that most corrective actions to address the sixteen corrective action items listed in the Restart Action Plan have been completed satisfactorily. The licensee stated that the remaining Restart Action Plan corrective items will be completed prior to plant restart. (Section E1.5)

- The team noted that aggressive measures have been implemented to identify and correct significant 10 CFR 50.59 safety evaluation process related deficiencies. Major improvements have been made in the last six months in the area of 10 CFR 50.59 safety evaluation program and training. (Section E.1.6)

- The team determined that continued improvement in the quality of 50.59 safety screenings and evaluations performed by the licensee's 10 CFR 50.59 qualified preparers and reviewers is needed. (Section E1.6)

- The team concluded that licensee efforts to address NRC concerns regarding Case-Specific Checklist Item No. 4A, "Failure to Perform Safety Evaluations or Screenings", and Case-Specific Checklist Item No. 4B, "Inadequate Safety Evaluations", and the related corrective actions proposed and completed had been effective and these items will be closed. (Section E.1.6)

- The 10 CFR 50.59 training, including the practical session, presently provided to plant personnel was considered much improved. (Section E5.1)

- 10 CFR 50.59 safety evaluation related audits and self assessments performed prior to 1999 were not sufficiently critical and did not identify many problems. Major improvement could be seen in audits and assessments performed in 1999. (Section E7.1)

Report Details

Background

NRC inspections and licensee audits and self assessments conducted in 1998 and 1999, identified significant concerns regarding the adequacy of the licensee's 10 CFR 50.59 program and its implementation. Specifically, the NRC identified that Safety Evaluations (SEs) were inadequate or not performed when needed resulting in the failure to identify a number of unreviewed safety questions. In addition, the program allowed changes to be implemented without 10 CFR 50.59 reviews. This represented a programmatic breakdown of D. C. Cook's ability to perform SEs to adequately assess the consequences of changes and ensure the plant was maintained as designed and as specified in the licensing basis.

As a result of these concerns, the licensee conducted self-assessments and root cause investigations to identify 10 CFR 50.59 related problems and their root causes. Some of the root causes identified included the lack of clear procedural guidance, lack of personnel understanding of "change" and "design licensing basis", and low management expectations regarding the acceptability of 10 CFR 50.59 reviews.

To address the deficiencies identified in the 10 CFR 50.59 program and processes, the licensee initiated a 10 CFR 50.59 Restart Action Plan to address the problems noted and to prevent recurrence. Corrective actions included: complete rewrite of the 10 CFR 50.59 procedure; establishment of an in-line review of safety screenings (SSs) and SEs using industry experts (Nuclear Safety Assessment Team (NSAT)), use of performance indicators to measure and trend the quality of 10 CFR 50.59 products; reviews to identify and eliminate 10 CFR 50.59 bypass mechanisms; development of Cook-specific 10 CFR 50.59 training modules; implementation of 10 CFR 50.59 training to appropriate personnel; review of previously performed SEs to identify potential unreviewed safety questions (USQs) and performance of an independent assessment of the upgraded 10 CFR 50.59 program and its implementation.

Restart Action Plan No. 004, dated September 20, 1999, was issued to provide actions to correct deficiencies identified relative to 10 CFR 50.59 programs and processes and to address Manual Chapter (MC) 0350 case specific checklist items 4A and 4B. The plan specified root cause acceptance criteria and corrective action items and effectiveness measures to address the 10 CFR 50.59 programmatic deficiencies identified by the NRC and by licensee audits and self assessments.

The team reviewed the upgraded 10 CFR 50.59 program for adequacy and assessed the effectiveness of its implementation. The team examined the licensee's actions to identify the related root causes, the restart acceptance criteria, and the corrective actions initiated and completed to resolve the identified concerns and to prevent recurrence. Inspection results indicated that the licensee performed a comprehensive root cause investigation to identify 10 CFR 50.59 related deficiencies, established reasonable restart acceptance criteria and initiated appropriate corrective actions. At the end of the inspection the majority of the fourteen restart action items delineated in the Leadership Plan to address the identified 10 CFR 50.59 related concerns had been completed.

III. Engineering

E1 Conduct of Engineering

E1.1 10 CFR 50.59 Safety Screenings and Evaluation:

a. Inspection Scope

The team evaluated the licensee's program for 10 CFR 50.59 SSs and SEs. The team reviewed approximately 50 approved 10 CFR 50.59 SSs and SEs for adequacy. The review emphasized the adequacy of controls and compliance with regulatory requirements.

b. Findings and Observations

The SSs and SEs reviewed by the team were generally of good technical quality, appropriate for the plant changes reviewed, and clearly described the proposed design changes. The SEs appropriately addressed the 10 CFR 50.59 review questions. The team determined that approved 10 CFR 50.59 SSs properly classified changes as to whether a 10 CFR 50.59 SE was required. The team determined that approved 10 CFR 50.59 SEs properly determined whether the changes represented an USQ with appropriate justification. The team did not identify any unreviewed safety questions.

The team reviewed 10 CFR 50.59 SS and SE documentation provided by the licensee for a sample of five procedure revisions. The team determined that 10 CFR 50.59 SSs had been performed for three of the procedure revisions and that a 10 CFR 50.59 SE had been performed for one procedure revision (procedure 2IHP5040.EMP.002). A screening had been initiated for the fifth procedure change (procedure 12MHP5021.019.003) but had not yet been formally reviewed and approved. Additionally, the team reviewed the approved screenings and the approved evaluation and determined that they were acceptable.

The team also reviewed sixteen 10 CFR 50.59 SSs and two 10 CFR 50.59 SEs in the Electrical and Instrument and Control (I&C) areas. The NSAT members also reviewed these 10 CFR 50.59 documents and generated comments that were satisfactorily resolved. The team considered the final 10 CFR 50.59 SSs and SEs to be sufficiently thorough.

The team noted that the NSAT comments on draft SSs and SEs had identified substantive issues regarding the quality of many SSs and SEs proposed by the licensee's staff. The team noted that, in some cases, determinations that a USQ did not exist were not fully supported by draft 10 CFR 50.59 SEs prepared by the staff. The deficiencies indicated a heavy dependence on the NSAT review to ensure acceptable quality for SSs and SEs. Deficiencies associated with proposed SSs and SEs were addressed prior to approval.

c. Conclusions

The team concluded that the 10 CFR Part 50.59 SSs and SEs were thorough and appropriate for the plant changes reviewed. Changes requiring 10 CFR 50.59 SEs were appropriately identified and addressed. 10 CFR 50.59 applicability was appropriately addressed for procedure revisions. Determinations for whether changes represented unreviewed safety questions were correct with appropriate justification. However, the team determined that the adequacy of the SEs was significantly dependent upon the in-line reviews performed by the licensee's NSAT. The 10 CFR 50.59 SEs issued after NSAT in-line reviews were considered acceptable.

E1.2 10 CFR 50.59 Process Bypass Mechanisms

a. Inspection Scope

The team reviewed the licensee's corrective actions to eliminate potential 10 CFR 50.59 bypass mechanisms in the identified work processes. This corrective action addresses the licensee's NRC Commitment No. 7316 in reply to the NRC's Notice of Violation dated October 13, 1998.

b. Observations and Findings

Bypass mechanisms have the potential to allow changes to be introduced without requiring 10 CFR 50.59 SSs and SEs. The licensee initially identified 29 work processes with potential bypass mechanisms and 13 additional processes were subsequently identified during the inspection by an audit conducted by the licensee. Action items for the 29 work processes were closed and the 13 additional items were assigned condition reports. The condition reports were initiated to document the deficiencies, and track corrective actions.

The team reviewed the 10 CFR 50.59 bypasses identified by the licensee to determine if the licensee correctly identified the bypasses and if corrective actions to address this issue and to prevent recurrence were in place. The team reviewed the licensee's corrective actions taken to eliminate potential 10 CFR 50.59 bypass mechanisms in the identified work processes. In addition, the team verified that the licensee had in-place a mechanism to identify future potential bypasses, and to correct the potential bypasses once they were identified. The licensee conducted 10 CFR 50.59 bypass training for first line supervisors. Based on interviews with eight SE preparers/evaluators, the inspectors determined that the individuals interviewed were adequately trained to recognize potential 10 CFR 50.59 bypasses.

c. Conclusions

The team concluded that the corrective actions taken by the licensee to address 10 CFR 50.59 bypass mechanisms were appropriate. In addition, the licensee provided training to selected engineering personnel to enhance their knowledge of the 10 CFR 50.59 process and improve their ability to recognize potential 10 CFR 50.59 bypass mechanisms.

E1.3 10 CFR 50.59 Safety Evaluation Related Condition Reports

a. Inspection Scope

The team reviewed the licensee's corrective action reports issued for inadequate 10 CFR 50.59 SSs and SEs to evaluate adequacy of corrective actions.

b. Observations and Findings

The licensee had established the NSAT as a final barrier to ensure that 10 CFR 50.59 SSs and SEs were acceptable prior to issuance. NSAT issued a condition report (CR) for each SS and SE identified as being unsatisfactory. The team determined that NSAT had done a thorough job of identifying 10 CFR 50.59 SS and SE problems.

The team reviewed approximately 40 CRs, issued during the last 4 months, related to SSs and SEs. The condition reports indicated that NSAT identified a significant number of inadequate SSs and SEs during their reviews of Design Change Packages (DCPs). Some of these were safety significant. However, NSAT had not identified the significance of the problems and did not identify most of these problems as potential USQs. The team determined that approximately 15 CRs were potential USQs. The potential USQs appeared to indicate that the training and qualification programs were not fully effective in improving the performance of some licensee staff. The licensee stated that they intended to identify, evaluate, and track the potential USQs identified by NSAT and the team, and provide systems training to their staff.

The team noted that some NSAT observations from March 1999 had not been resolved as of the dates of this inspection. The team determined that the licensees implementation of corrective actions to correct the deficiencies identified by NSAT was not timely. In some cases the reviewed work was canceled after NSAT comments. NSAT members stated that there wasn't adequate time to track these issues and mentor the staff. This did not meet the licensee's start up plan objective to mentor and train the engineering staff to improve their performance. In addition, NSAT had not used the lessons learned results of the 10 CFR 50.59 in-line reviews to identify where additional improvements were needed regarding training and the 10 CFR 50.59 program.

Based on the licensee rating system for engineering work products, 10 CFR 50.59 product quality had not improved. The licensee stated that the quality of engineering was not improving because newly qualified people had been added to the 10 CFR 50.59 review process and they still required experience with writing SSs and SEs.

During review of canceled and rejected 10 CFR 50.59 reviews, the inspectors noted that several CRs have been closed without completing and documenting the required corrective actions. For example, CR 99-10743 documented incorrect disposition of CR 98-4650 and was closed without further action. Also, corrective action for CR 99-18155 written by NSAT on July 11, 1999, for an inadequate procedure change were not timely. The CR was issued to document potential use of a faulty curve in the procedure used to calculate load limits for lifting weights over the spent fuel. Use of this curve could have

resulted in violation of Technical Specification Section 3.9.7. The reportability review was due November 15, 1999, while the engineering evaluation was due March 13, 2000.

The team also reviewed a sample of electrical and I&C related 10 CFR 50.59 related condition reports and found that the CRs adequately described the problems identified. Corrective actions taken were generally well documented prior to final closure. However, the team identified another example where CR No. P-99-01355 had been closed prior to documenting the completed corrective actions. This CR was issued because an unqualified person performed twenty-seven 10 CFR 50.59 screenings during the period of August 1998 through January 1999. This Category 3 condition report, closed on June 18, 1999, did not identify whether any similar instances of SSs and SEs performed by non-qualified personnel were identified or whether any corrective actions were taken to prevent recurrence of similar issues.

c. Conclusions

The licensee's corrective actions to improve the quality of engineering work have not been fully effective or timely. A review of 40 CRs indicated that a significant number of 10 CFR 50.59 SEs were inadequate or failed to identify USQs prior to NSAT review. The licensee had not consistently used the NSAT results to identify where additional improvements were needed with training and with the 10 CFR 50.59 program.

E1.4 Nuclear Safety Assessment Team In-Line Reviews

a. Inspection Scope

The team reviewed the 10 CFR 50.59 SE in-line review process, performed by the NSAT, which was initiated in February 1999.

b. Observations and Findings

The team reviewed procedure No. EHI 1040.SES.001, (Rev. 2), "Nuclear Safety Assessment Team 10 CFR 50.59 Review Process", dated June 10, 1999. This procedure provided the requirements for the NSAT team and the NSAT Manager. The team discussed the NSAT process with the Manager and interviewed four members of the team. The team concluded that the members of the NSAT were well qualified in the 10 CFR 50.59 process and had extensive nuclear power plant experience.

Procedure No. EHI 1040.SES.001 required that the NSAT Manager track and trend the results of the NSAT reviews. While the NSAT Manager issued a weekly report indicating the graded quality of the 10 CFR 50.59 SSs and SEs for each department, this report did not include the issues identified by the NSAT members, any root causes for the noted deficiencies, or any suggested corrective actions required by each of the departments. The team also noted that NSAT was not performing reviews to determine common causes and corrective actions to address deficiencies identified by NSAT during reviews of 10 CFR 50.59 products.

The team determined that 10 CFR 50.59 SSs and SEs issued after February 1999 have been thoroughly reviewed by experienced NSAT members. The team considered the

final approved 10 CFR 50.59 SSs and SEs to be of good quality. However, without NSAT in-line reviews, a number of the 10 CFR 50.59 products submitted for review would not have been acceptable from a regulatory standpoint as previously discussed in Section E1.3 of this report.

c. Conclusions

The team concluded that the NSAT process was a significant factor in improving the quality of 10 CFR 50.59 SSs and SEs. The NSAT members were broadly experienced and qualified for reviewing 10 CFR 50.59 SSs and SEs.

E1.5 Follow up on Restart Action Plan Corrective Action Items

a. Inspection Scope

The team reviewed the licensee's corrective actions to address 10 CFR 50.59 Safety Evaluation program weaknesses. The inspectors reviewed a sample of applicable Corrective Action Items which were documented in the licensees Restart Action Plan 004.

b. Observations and Findings

The team reviewed the following Corrective Action Items initiated to address 10 CFR 50.59 related deficiencies.

Corrective Action Item No. 4: Perform reviews of D. C. Cook work processes for mechanisms that may potentially allow changes to be introduced without performing 10 CFR 50.59 safety screens/evaluations (bypasses).

Licensee Corrective Actions**:** The licensee identified 29 work processes with potential 10 CFR 50.59 bypass mechanisms. Thirteen additional mechanisms were subsequently identified during the inspection by an audit conducted by the licensee. Action items for the 29 work processes were closed and the 13 additional items were assigned condition reports. The inspectors considered the licensee actions to be acceptable.

Corrective Action Item No. 5: Address the mechanisms that may potentially allow changes to be introduced without performing 10 CFR 50.59 safety screens/evaluations (bypasses) in the identified work processes.

Licensee Corrective Actions: The inspectors verified that actions were taken to eliminate potential bypasses and that the actions were completed on the identified items. In addition, the inspectors verified that the licensee had in-place a mechanism to identify potential 10 CFR 50.59 bypasses, and to correct the potential bypasses once they were identified. The inspectors concluded that the actions taken by the licensee to address 10 CFR 50.59 bypass mechanisms were appropriate.

Corrective Action Item No. 6: Identify and implement the proper training approach (including identifying the target plant population) to address a knowledge gap in recognizing when a configuration/design change is introduced and in recognizing that

changes to the facility and procedures and the performance of tests and experiments must be 10 CFR 50.59 screened/evaluated.

Licensee Corrective Actions: The licensee identified the training approaches needed for 10 CFR 50.59 training and the target plant personnel who needed the training. Training lesson plans were developed and training was initiated. This training initiative was in progress during this inspection. Based on interviews of engineering personnel, the inspectors determined that the licensee training appeared effective in increasing awareness in this engineering performance area.

Corrective Action Item No. 7: Establish an in-line review of work process procedures and instructions by a qualified technical reviewer to identify and prevent the introduction of mechanisms that may potentially allow changes to be introduced without performing SSs and SEs.

Licensee Corrective Actions: The procedure for this action item had been prepared but not approved during the inspection. Personnel had not been trained yet for the use of the new procedure. This action item remains open.

Corrective Action Item No. 8: Develop Cook-specific 10 CFR 50.59 training modules by industry experts.

Licensee Corrective Actions: The licensee contracted a group of engineering training specialists to develop a training course and provide instructions to support 10 CFR 50.59 activities at Cook Nuclear Plant. Training modules TS-C-CS44 and TS-O-0003 were developed for this training. The lesson plans will be revised based on the feedback from the previous training sessions. The team reviewed these training modules and considered them to be acceptable.

Corrective Action Item No. 9: Perform 10 CFR 50.59 training utilizing the new initial 10 CFR 50.59 training for personnel performing and reviewing SSs and SEs.

Licensee Corrective Actions: A new 10 CFR 50.59 training course was developed and pilot training was conducted during the April 27 - 29, 1999 time period. The regular three day training sessions were started on May 11, 1999, and are expected to continue through November 1999. While several contractors were trained in the recent training sessions, about half of the D. C. Cook plant personnel needing the 10 CFR 50.59 training have not yet been trained. Pending completion of training for all the required plant personnel, this action item remains open.

Corrective Action Item No. 15: Establish a controlled electronic Updated Final Safety Analysis Report (UFSAR).

Licensee Corrective Actions: Actions had not been completed on this item at the close of the inspection. The licensee had installed an electronic copy of the UFSAR and obtained the services of a contractor to independently verify the electronic version with the hard copy. However, actions were being taken to reconcile the page numbering of the electronic version with that of the hard copies. This item remains open.

Restart Action Plan Corrective Action Item No. 16: Perform future periodic monitoring of the 10 CFR 50.59 program and its implementation in accordance with PMP 7034.SAP.001.

Licensee Corrective Actions: This item was complete. Quarterly Assessments were performed and are planned to be performed in the future.

c. Conclusions

The team noted that the licensee has taken aggressive measures to identify and correct 10 CFR 50.59 safety evaluation process related deficiencies. The team concluded that most corrective actions required to address the sixteen corrective action items listed in the licensees Restart Action Plan have been completed satisfactorily. The licensee stated that the remaining restart action items will be completed prior to plant restart. The team is satisfied that the progress made on these actions and the plans for completing remaining actions will adequately address these issues.

E1.6 Safety Evaluation Process Conclusions

Based on findings from Sections E1.1 through E1.5, the team noted that aggressive measures have been implemented to identify and correct significant 10 CFR 50.59 safety evaluation process related deficiencies. Major improvements have been made in the last six months in the area of 10 CFR 50.59 safety evaluation program development, implementation and training. However, not all concerns have been resolved and continued improvement, mainly in the quality of 10 CFR 50.59 safety screenings and evaluations performed by the licensee's 10 CFR 50.59 qualified preparers and reviewers, appears warranted.

The team concluded that licensee efforts to address NRC concerns regarding Case-Specific Checklist Item No. 4A, "Failure to Perform Safety Evaluations of Screenings", and Case-Specific Checklist Item No. 4B, "Inadequate Safety Evaluations", and the related corrective actions proposed and completed had been effective and these items will be closed.

E3 Engineering Procedures and Documentation

E3.1 10 CFR 50.59 Safety Evaluation Procedures

a. Inspection Scope

The team reviewed procedure PMP-1040.SES.001, "Safety Screenings/Evaluations", for adequacy. The team also reviewed other procedures for determining whether existing conditions which were not consistent with the Updated Safety Analysis Report (USAR) description would receive appropriate evaluation under 10 CFR 50.59.

b. Observations and Findings

The team determined that revision 7a of procedure PMP-1040.SES.001, "Safety Screenings/Evaluations", correctly reflected the requirements of 10 CFR 50.59. The

procedure provided sufficient guidance such that a trained and experienced person following the procedure could correctly determine whether a 10 CFR 50.59 safety evaluation was required and, if so, understand what was required for writing an adequate evaluation. The team noted that, in comparison to revision 4, revision 7a required more consideration for 10 CFR 50.59 applicability and better justification for determinations that an unreviewed safety question did not exist. The team noted that the revised procedure required NSAT review and approval for the majority of SEs and screenings. Based on discussions with licensee management, the team determined that the licensee intended to retain the NSAT in-line reviews of 10 CFR 50.59 SSs and SEs until its staff had become more experienced with the revised process and had demonstrated their proficiency.

The team noted that some of the definitions and the scope of the procedure, while legally accurate, did not elaborate on some of the NRC applicable interpretations of 10 CFR 50.59. For example, neither the scope of the procedure nor the definition for "Changes in the Facility as Described in the Safety Analysis Report", mentioned that retaining existing conditions which were contrary to the USAR description required a 10 CFR 50.59 safety evaluation. Additionally, the definition for "Changes in Procedures as Described in the Safety Analysis Report", did not discuss that changes to actions described in the USAR are considered changes in procedures as described in the safety analysis report thereby requiring a 10 CFR 50.59 safety evaluation. The body of the procedure provided additional discussion of 10 CFR 50.59 requirements beyond what was outlined in the definitions section and addressed the weaknesses noted above for some of the definitions. However, the team was concerned that an untrained individual may draw erroneous conclusions from a cursory review of the procedure regarding what activities or conditions would require a 10 CFR 50.59 safety evaluation.

For consideration of existing conditions which were not consistent with the USAR, the team confirmed that procedure PMP-7030.CAP.001, "Corrective Action Program (CAP) Process Flow", required that issues which were inconsistent with requirements be documented and processed as part of the condition report process. Procedure PMP-7300.UFSAR.001, "UFSAR Update Process", specifically required that a condition report be initiated to address discrepancies between the facility, procedures, or analyses and the USAR description. Depending upon the significance of the issue, PMP-7030.CAP.001, "Corrective Action Program (CAP) Process Flow", required that the issue be addressed using either PMP-7030.INV.001, "Root Cause Investigations And Approvals", or PMP-7030.INV.002, "Apparent Cause Evaluation and Condition Resolution". Both procedure PMP-7030.INV.001 and PMP-7030.INV.002 required that accepting conditions "use-as-is" be evaluated for operability and that the condition be addressed via the design change process or an appropriate change process. The team verified that the design change process, outlined in procedure 12 EHP 5040.MOD.006, "Design Change Packages", required that a 10 CFR 50.59 screening or evaluation be performed using the 10 CFR 50.59 screening or evaluation procedure. Additionally, procedure 12 EHP 5043 EDC.001, "Evaluation of Discrepant Conditions", required that a 10 CFR 50.59 safety screening or evaluation be performed for "use-as-is" determinations. The team also verified that procedure PMP-7300.UFSAR.001, "UFSAR Update Process", required that changes to the USAR be evaluated using procedure PMP-1040.SES.001, "Safety Screenings/Evaluations".

c. Conclusions

The revised 10 CFR 50.59 safety evaluation procedure was conservative and inspectors considered it acceptable. Licensee procedures appropriately required that existing conditions which were inconsistent with the USAR be screened or evaluated under the 10 CFR 50.59 process.

E4 Engineering Staff Knowledge and Performance

E4.1 10 CFR 50.59 Safety Evaluation Staff Knowledge and Performance

a. Inspection Scope

The team interviewed selected individuals qualified to perform 10 CFR 50.59 SSs and/or SEs.

b. Observations and Findings

The individuals interviewed considered the 10 CFR 50.59 process workable. The individuals acknowledged that although they received the training, additional practice was needed to gain practical experience using the new process. Individuals interviewed demonstrated adequate training and knowledge of the 10 CFR 50.59 process.

c. Conclusions

The inspectors determined that the individuals interviewed appeared adequately trained and knowledgeable of the 10 CFR 50.59 process.

E5 Engineering Staff Training and Qualification

E5.1 10 CFR 50.59 Safety Evaluation Training and Qualification

a. Inspection Scope

The team reviewed the current 10 CFR 50.59 training provided to plant personnel.

b. Observations and Findings

The team reviewed the scope of the current 10 CFR 50.59 training plan and implementation. A contractor was selected during February 1999 to develop 10 CFR 50.59 training and lesson plans. Three day training sessions were implemented in February 1999 and were scheduled to continue until the middle of November 1999. Prior to this rigorous three day training, several D. C. Cook employees and contractors had been qualified to perform 10 CFR 50.59 SSs and SEs after a one day training. All the 10 CFR 50.59 SSs and SEs issued after February 1999 were reviewed by the NSAT members.

Team members attended portions of 10 CFR 50.59 training sessions and considered the quality of the training very good. The team noted that the classes included several

examples of 10 CFR 50.59 SEs and noted good interactions between the instructor and the students. There was a written test at the end of the third day with a score of 80 percent or above considered passing. The training conducted on the week of September 14 to 17, 1999, included a practical session on the 4th day. This Position Specific Guidance training qualifies the students as full fledged 10 CFR 50.59 screeners/evaluators. However, specific training to familiarize the staff on the 10 CFR 50.59 Cook specific procedure was not included in this training program.

The team determined that training to 10 CFR 50.59 safety evaluation preparers and reviewers on the upgraded 10 CFR 50.59 procedure was not included in the upgraded training. Also, Plant Systems Integrated training and Accident Analysis (UFSAR Chapter 14) training was not yet provided to the qualified 10 CFR 50.59 safety evaluation preparers and reviewers.

The team noted that the majority of D. C. Cook's 10 CFR 50.59 certified evaluators were contractors. The licensee stated that more plant personnel would be included in the future training sessions. The team noted that many licensee employees had completed the three day 10 CFR 50.59 training course but were not yet certified to perform SEs, as they did not complete the position specific guidance training needed for qualification. The team interviewed a few engineers in this category and noted that the additional training would not be completed soon because the engineers had other urgent work assigned to them.

c. Conclusions

The 10 CFR 50.59 training, including the practical session, presently provided to plant personnel was considered much improved.

E7 Quality Assurance in Engineering Activities

E7.1 10 CFR 50.59 Safety Evaluation Related Audits and Assessments

a. Inspection Scope

The team reviewed selected 10 CFR 50.59 program related audits and assessments.

b. Observations and Findings

The team noted that audits and self assessments performed prior to 1999 were not critical and did not identify many 10 CFR 50.59 program related problems. Major improvement could be seen in the conduct and results of audits and assessments performed in 1999. For example, Performance Assurance audit PA 99-S08 "50.59 Restart Action Plan", dated September 21, 1999, was self critical and effective in identifying important "gaps" that needed to be addressed prior to restart. In addition, Self Assessment SA-1999-002-RCL, dated September 30, 1999, "10 CFR 50.59 Program" was also very detailed and self critical. Results indicated that at least 13 new mechanisms that may potentially allow changes without a safety screening and evaluation still existed, 10 CFR 50.59 procedure distribution requirements were not being consistently followed and that plant personnel knowledge and ability to recognize

when a change is introduced and the need to perform a safety evaluation needed improvement. A questionnaire was circulated to plant personnel to determine their ability to recognize when a change is introduced and the need to perform a safety evaluation. The following results were recorded: Operations department personnel scored 79 percent, maintenance 71 percent, work control 63 percent and engineering 60 percent.

c. Conclusions

The team noted that audits and self assessments performed prior to 1999 were not very critical and did not identify many of the 10 CFR 50.59 program related problems. Major improvement could be seen in the conduct and results of audits and assessments performed in 1999.

E8 Miscellaneous Engineering Issues

E8.1 Previously Identified Items

E8.1.1 (Closed) Violation 50-315/98152-01282; 50-316/98152-01282: Sump roof vent hole design basis. The licensee failed to translate the design basis for containment recirculation sump roof vent holes into specifications, drawings, procedures, and instructions. The team reviewed condition report (CR) 1998-0345 which was associated with this item. The team determined that the licensee had performed a design change (Design Change Package 12-DCP-859) to translate the containment sump design basis into appropriate design documents and plant procedures. The licensee performed a 10 CFR 50.59 safety screening which demonstrated that the changes to the sump design did not represent a change to the plant as described in the updated safety analysis report (USAR). Additionally, procedure 12 EHP 5040.MOD.006, “Design Change Packages”, was modified to specify that field changes only applied to changes which could be made within the bounds of approved 10 CFR 50.59 SS/SEs. The team considered the licensee’s corrective actions acceptable to preclude recurrence. This item was previously identified as Escalated Enforcement Item 50-315;316/98004-01, failure to perform a safety evaluation for re-drilling sump roof vent holes, and was originally discussed in section E1.1.1.2(E)(1) of Inspection Report 50-315/97201; 50-316/97201. This violation is closed.

E8.1.2 (Closed) Violation 50-315/98152-01292; 50-316/98152-01292: Inadequate safety evaluation review for containment recirculation sump inlet screen modification. During the implementation of a design change to the containment recirculation sump inlet grating, changes to the facility that had not been evaluated in accordance with 10 CFR 50.59 occurred. These changes included welding of the grating with fine mesh screening material sandwiched in between rather than using stainless steel fasteners (original design), and reducing the individual sump screen “section” size.

The team reviewed the licensee’s corrective actions addressed in letter Number AEP: NRC: 1260GH, dated March 19, 1999. Corrective actions included the following: revision to procedure PMP 1040 to include a multi-discipline team review of shutdown risk assessments, and to ensure that outage schedules do not include high-risk evolutions, an evaluation for a dual-train Component Cooling Water (CCW) outage on

the refueling unit with the other unit at power was performed. The team concluded that the licensee's corrective actions were acceptable. This item was previously identified as EEI Item 50-315/98004-05; 50-316/98004-05. This item is closed.

E8.1.3 (Closed) Violation 50-315/98152-01312; 50-316/98152-01312: Unit 2 dual train CCW and Emergency Service Water (ESW) outage. During the Unit 2 full core off-load outage in 1996 and with Unit 1 at 100% power, both Unit 2 CCW and ESW trains were taken out-of-service on August 7 through 8, 1996, leaving one Unit 1 CCW train available to supply spent fuel pool (SFP) cooling. The 10 CFR 50.59 SEs performed for the core off-load did not recognize that the Unit 1 CCW system could not perform its safety function under the design basis assumptions described in the USAR.

The team reviewed the licensee's corrective actions addressed in letter Number AEP: NRC: 1260GH dated March 19, 1999. Corrective actions included the following: revision to procedure PMP. 1040, to include a multi-discipline team review of shutdown risk assessments, and to ensure that outage schedules do not include high-risk evolutions, an evaluation for a dual-train CCW outage on the refueling unit with the other unit at power was performed. The team concluded that the licensee's corrective actions were acceptable. This item was previously identified as EEI Item 50-315/98009-29; 50-316/98009-29. This item is closed.

E8.1.4 (Closed) EEI 50-315/98004-02(DRS)): An SE had not been performed for a missing nut on the Unit 1 containment recirculation sump screen support bracket. The licensee did not recognize that this was a change to the plant design. In addition, the existing 3/4 anchor was bent downward to permit installation of ½ inch bolts for fastening the screen into position. The licensee issued CR 98-0392 and an SE was performed. Procedure 227400-STG-2400-02 was revised to include guidance when a 10 CFR 50.59 screening was appropriate. A self-assessment was performed to review a sample of Action Requests (ARs) to determine if any changes should have required a 10 CFR 50.59 review. Training sessions for the SE program were provided. This item is closed.

E8.1.5 (Closed) EEI 50-315/98004-04(DRS); 50-316/98004-04(DRS)): An SE had not been performed to address a change in plant design for using stainless steel screening material to replace galvanized steel for the recirculation sump screens. The licensee's corrective actions included an SE for the new sump screen design. To enhance proper verification of the screen installation, procedure 12-MHP 4030.STP.008 was revised. This item is closed.

E8.1.6 (Closed) EEI 50-315/98004-11(DRS); 50-316/98004-11(DRS)): An SE had not been performed until April 1997 for a filter media micron size and composition change that was implemented in July 1996. An SS was performed for minor modification No.12 MM 078 to change the type of filters used in the Reactor Coolant System (RCS), seal water injection, and seal water return filters to allow the use of more than one micron size filter media. The SS evaluated filter media size ratings between 0.25 to 0.45 microns and answered "NO" to all of the screening questions. The licensee did not recognize that the change in filter media size was an implied change to the plant requiring a SE.

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The licensee's corrective actions included writing CR 96-1672 and, in part, CR 98-0343 to address this issue. An SE was performed for the micron filter change. Self-

evaluations and assessments were performed to assess programmatic concerns with the 10 CFR 50.59 program. In addition, Procedure PMP 1040.SES.001 was revised to incorporate various administrative changes, assessment conclusions, and lessons learned in the SS and SE process. This item is closed.

V. Management Meetings

X1 Exit Meeting Summary

The team presented the inspection results to members of licensee management at the conclusion of the inspection on October 28, 1999. The licensee acknowledged the inspection conclusions presented and did not identify any potential report material as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Casteel, Engineering 50.59 Coordinator
M. Finissi, Plant Engineering Director
D. Garner, Director Plant Engineer
R. Gaston, Compliance Manager
L. Gibson, NSAT (Contractor)
R. Godley, Director, Regulatory Affairs
S. Greenlee, Director Design Engineering
T. Noonan, Plant Manager
R. Powers, Senior Vice President
T. Quaka, Nuclear Safety Assessment
M. Rencheck, Vice President of Engineering
D. Richardson, NSAT (Contractor)
D. Robinson, NSAT Manager
T. Taylor, Licensing
K. VanDyne, Regulatory Compliance

US NRC

B. Bartlett, Senior Resident Inspector
J. Grobe, Director, Division of Reactor Safety
J. Jacobson, Chief, Mechanical Engineering Branch

INSPECTION PROCEDURES USED

IP 37001:	10 CFR 50.59 Safety Evaluation Program
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 92903	Follow up-Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-315;316/98004-02	EEI	Failure to perform a safety evaluation screening
50-315;316/98004-04	EEI	Inadequate safety evaluation review for containment recirculation sump inlet screen modification
50-315;316/98004-11	EEI	Inadequate safety evaluation review
50-315;316/98152-01282 (50-315;316/98004-01)	VIO	Sump roof vent hole design basis.
50-315;316/98152-01312 (50-315;316/98009-29)	VIO	Unit 2 dual train CCW and ESW outage
50-315;316/98152-01292 (50-315;316/98004-05)	VIO	Inadequate safety evaluation review for containment recirculation sump inlet screen modification

Discussed

None

LIST OF ACRONYMS USED

AEP	American Electric Power
ARs	Action Requests
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
DCP	Design Change Package
DRS	Division of Reactor Safety
EEI	Escalated Enforcement Item
ESRR	Expanded Systems Readiness Review
ESW	Essential Service Water
FSAR	Final Safety Analysis Report
I&C	Instrumentation and Controls
NRC	Nuclear Regulatory Commission
NSAT	Nuclear Safety Assessment Team
PA	Performance Assurance
PMP	Plant managers procedure
PSG	Position Specific Guidance
RCS	Reactor Coolant System
SE	Safety Evaluation
SFP	Spent Fuel Pool
SS	Safety Screening
SRRB	System Readiness Review Board
UFSAR	Updated Final Safety Analysis Report
USQ	Unreviewed Safety Question
VIO	Violation

PARTIAL LIST OF DOCUMENTS REVIEWED

Condition Reports

CR No. P-99-01355 - "Unqualified Personnel Performing Safety Evaluations"
CR No. P-99-01500 - "No Safety Evaluations Performed"
CR No. P-99-09876 - "Safety Evaluation on Switchgear Design Modification Does Not Exist"
CR No. P-99-13955 - "Emergency Diesel Generator 2CD Fuses Replaced Without a 10 CFR 50.59 screening/evaluation".
CR No. P-99-15125 - "Solenoid was Replaced Without a Design Change"
CR No. P-99-18128 - "Removing Control Room Annunciators Without a Safety Evaluation".
CR 98-0345, "Effective Measures for Design Control Were Not Taken in the Case of the Recent Modifications to the Recirc Sump Screens and the Recirc Sump Vent Holes," dated January 28, 1998.
CR P-99-02343, "Operability Determination for CR-96-1496 Indicated RHR is Operable After Wrong Type of Vent Valve Was Installed Under DC-819 But No 50.59 Screening Was Done to Justify Valve Remaining In System," dated February 10, 1999.
CR P-99-06584, "A Number of Potential 10 CFR 50.59 Bypass Processes Exist," dated March 24, 1999.
CR P-99-07932, "Radiation Monitor Setpoint Calculation Process Is a Possible 10 CFR 50.59 Evaluation Bypass Candidate," dated April 8, 1999.
CR P-99-01630, "Evaluation per 10 CFR 50.59 Was Not Performed for Compensatory Measures Established for an Operable but Degraded Condition of Valve Leak-by in the CCW System," dated January 28, 1999.
CR P-99-10575, "A015696-2 Accepted Unqualified Coating As-Is Without 50.59," dated May 4, 1999.
CR P-99-01484, Control Room Doors Taken from Normally Open to Normally Closed via an E-mail, dated January 26, 1999.
CR P-99-10179 Safety Screening (1999-0361-00) for a Temporary Installation of Test Equipment on the 1CD Diesel Failed to Identify That a Full 10 CFR 50.59 Safety Evaluation was Required.
CR P-99-10364 Impact of Control Air Compressor Modification on the Diesel Generator Loading was not Included in the Safety Evaluation Portion of the 10 CFR 50.59 Determination.
CR P-99-10371 Safety Screen was Unsatisfactory for Not Identifying That Removal of Limit on Load Limit for the ATWS Mitigating System Actuation Circuitry was a Change to the Facility.
CR P-99-10376 Safety Evaluation was Unsatisfactory for Modification DCP-0855 Which Recommended That the UFSAR be Revised for Parameter Values for CCW Flow Because of the Increased Design Temperature From 95 to 120 Degrees Fahrenheit.
CR P-99-10378 The 10 CFR 50.59 Safety Evaluation for UFSAR Change 98 UFSAR-556 was Determined to be Unsatisfactory Based on NSAT Review of the UFSAR Change Package.
CR P-99-10644 Component Equivalency was written to Replace 12 DG Wattmeters. Safety Screening Indicated That a Change in Design Existed. Procedure 227200-STG-5400-01 Does Not Allow CE if Change in Design Results.
CR P-99-10720 NSAT Review Identified an Inadequate Safety Screening for a Procedure Change.
CR P-99-11317 Safety Screening and Safety Evaluation Questions Regarding Post LOCA Hot Leg Switch Over and Potential Recriticality Were Incomplete and/or Incorrect.

CR P-99-11481 The 10 CFR 50.59 Safety Evaluation for the UFSAR Change 98 UFSAR-0229 was Determined to be Unsatisfactory Based on a Recent NSAT Review of the UFSAR Change Package.
CR P-99-11487 The Safety Evaluation for the UFSAR Change 98 UFSAR-0286 was Determined to be Unsatisfactory Based on a Recent NSAT Review of the UFSAR Change Package.
CR P-99-11490 The 50.59 Safety Evaluation for the UFSAR Change 98 UFSAR-0514 was Determined to be Unsatisfactory Based on a Recent NSAT Review of the UFSAR Change Package.
CR P-99-11493 The 10 CFR 50.59 Safety Evaluation for the UFSAR Change98 UFSAR-0663 was Determined to be Unsatisfactory Based on a Recent NSAT Review of the UFSAR Change Package.
CR P-99-12833 Inadequate Safety Screening as a Result of an Incorrect Procedure Change for Reducing Batching Tank Boron Concentration.
CR P-99-12873 Safety Screening and Evaluation for 12 DCP-283, Which Added Two Compressed Air Bottles to the PORV Backup Air Supply, Failed to Change Technical Specifications and Assess NRC SERs, and Used Improper Calculational Methods/Assumptions.
CR P-99-14764 Safety Screening/Evaluation 1999-0408-00 for UCR 0219 and 0220 was Unsatisfactory in that it Failed to Identify a Related NRC SER as the Acceptance Basis for a UFSAR Change.
CR P-99-14780 SS#1999-0459-00 as Submitted to NSAT was Unsatisfactory in that it Failed to Consider a LER Related NRC Commitment and the Acceptance Criteria Established in the SBO SER.
CR P-99-16064 NSAT Identified an Inadequate Safety Screening/Evaluation Validation and Supporting Safety Evaluation For a Procedure Revision (02-OHP 4023.028.001, Revision 6).
CR P-99-16930 NSAT Identified an Inadequate Safety Screening/Evaluation and Questionable UFSAR Change (UCR 98-UFSAR-0156)
CR P-99-17406 NSAT Review of Safety Screening an UFSAR Change UCR No. 98-UFSAR-0334 Found Significant Issues of Non-compliance With the Safety Evaluation Procedure PMP-1040.SES.001.
CR P-99-17435 Safety Evaluation Concerning Charging Pump Head/Capacity Resulted in Inappropriate Change to the UFSAR.
CR P-99-18157 The Initial Review Conducted by NSAT Considered the Safety Screening of Changes to Procedure 12PMP 4050.CHL.001, Rev.0, do not Meet the Requirements of PMP 1040.SES.001, Revision 7 and the SS was deemed Unsatisfactory.
CR P-99-18579 Proposed UFSAR Change to Delete Letdown Line Flow Alarm is Insufficiently Justified in the Safety Screening and Evaluation.
CR P-99-18872 Valve Stroke Timing Changed Without Safety Screening Being Marked as Change to SAR and Change to the Facility.
CR P-99-18925 The Lack of Adequate Guidance in the New Configuration Determination Procedure May Have Resulted in a Bypass of the Design Change Process and the 10 CFR 50.59 Process.
CR P-99-19557 Safety Screening for Containment Purge and Exhaust Isolation System Operability Test, Block E.1 (Change to Facility), Should be Marked “Yes” and a Safety Evaluation Should Have Been Prepared.
CR P-99-19564 NSAT Identified an Inadequate Safety Screening for a Procedure Change (revision to PMP 2291.PMT.001).
CR P-99-19739 NSAT Identified an Inadequate Safety Screening That Did Not Identify That a Commitment Change Was Required.

CR P-99-19788 Review of Safety Screening for the Ice Condenser Procedure Change Found a Discrepancy Between the Technical Specifications and the UFSAR/Design Basis.
CR P-99-19987 During the Preparation of 10 CFR 50.59 Safety Screening/Evaluation for EOP, a USQ was Identified in the Safety Screening Without Performing a Full Safety Evaluation.
CR P-99-20711 Site Protection Planned to Replace the Security Access Metal Detectors in the North Security Access Building With Newer Models Without Apparently Following Existing CNP Processes for Configuration Control.
CR P-99-20984 During Preparation of Safety Evaluation, for Implementation of PTM 2-IHP 5040.EMP.001, the Loss of Power to 2S Spent Fuel Pool Pump Was Not Considered.
CR P-99-21531 The Current Method of Issuing Motor Operator Actuator Torque/Thrust Setpoints has a Bypass of the 10 CFR 50.59 Review Requirements.
CR P-99-21636 Bypasses of the Configuration Control/Design Processes are Occurring That Indicate an Apparent Adverse Trend.
CR P-99-22143 NSAT Identified an Inadequate Safety Screening/Safety Evaluation for Proposed UFSAR Changes Regarding Containment Hydrogen Analysis.
CR P-99-22685 The ESW and CCW Surveillance Requirements Currently Address Pump Flow and Valve Alignment Rather Than Heat Transfer Capability.
CR P-99-23593 License Amendment Request to Allow Credit for RCCA Negative Reactivity Following a Cold Leg LBLOCA Failed to Identity that Crediting RCCA reactivity Involved an Unreviewed Safety Question.

Procedures

2IHP5040.EMP.002, Revision 0, “Installation and Removal of Temporary Power to Required Loads on 600V Bus 2-21e”
2IHP4030.STP.509, Revision 1, “Residual Heat Removal Suction Valve Interlock Bistable Functional Test”
2IHP4030.SMP.206, Revision 2, “ΔT/Tavg Protection Set III Functional Test and Calibration”
2EHP4030.STP.259, Revision 0, “DG2AB Start & Load Rejections”
12MHP5021.019.003, Revision 0, “Essential Service Water Strainer Maintenance”
12 EHP 5040.MOD.006, “Design Change Packages,” Revision 1a.
PMP-7300.UFSAR.001, “UFSAR Update Process,” Revision 2.
PMP-7030.CAP.001, “Corrective Action Program (CAP) Process Flow,” Revision 2.
PMI-7030, “Corrective Action Program,” Revision 27.
PMP-7030.INV.001, “Root Cause Investigation And Approvals,” Revision 4.
PMP-7030.INV.002, “Apparent Cause Evaluation And Condition Resolution,” Revision 3.
PMP-1040.SES.001, “Safety Screenings/Evaluations,” Revision 7a.
PMP-1040.SES,001, “Safety Screenings/Evaluations,” Revision 4.
12 EHP 5043.EDC.001, “Evaluation of Discrepant Conditions,” Revision 0.

Safety Evaluations

NSAT # 1999-0476-00 (2-DCP 604), “ABB 4 KV Circuit Breaker Refurbishment”.
NSAT # 1999-0854-00 (UCR 99-UFSAR-0837), “Change Requirements in UFSAR Associated with Electrical Cable Tray Separation/Loading”.
SE 1999-0401-00, “Compensatory Action for ODE-91-18-NESD-0034 Revision 1; Temporary Modification 12-99-0006,” dated May 13, 1999

SE 1999-0044-00, “Procedure 12-OHP.4022.018.001, Revision 4, Change 1, Loss of Spent Fuel Pit Cooling,” dated February 23, 1999
SE 1999-0339-00, “Procedure 1 EHP SP.103, Revision 0, U1 Control Room Tracer Gas Testing,” dated April 19, 1999
SE 1999-0875-00, “Installation and Removal of Temporary Power to Required Loads on 600V Bus 2-21e,” dated September 3, 1999
SS/SE#1999-0137-00 CCW Heat Exchanger (1HE-15W) Tube Plugging and Removal
SS/SE#1999-0456-00 Intake Tunnel Molluscide Treatment
SS/SE#1999-0467-00 Allow Non-Staggering of Reinforcing Steel Splices During Restoration of Steam Generator Enclosures for Unit 1 SGRP.
SE 1999-0701-00 Unit 1 Reactor Side Upender Winch Assembly Support Modification
SE 1999-0787-00 NESW Pump-Revise Impeller Material to Stainless Steel
SE 1999-0880-00 Replace CVCS Cross-Tie Valves
SE 1999-0131-00 EDG Starting Air Compressor Control Switch Replacement
SE 1999-0131-01 EDG Starting Air Compressor Control Switch Replacement
SE 1999-0869-00 Replacement of Diesel Generator Aftercoolers
SE 1999-0597-00 Replace Idler Wheel Assemblies on New and Spent Fuel Handling Crane
SE 1999-0597-01 Replace Idler Wheel Assemblies on New and Spent Fuel Handling Crane

Safety Screenings

NSAT # 1999-0107-00 “O1 MHP 2291. PMT.HFAICD, Rev. 2) “PMT for HFA Relay Contact Changes on U1 EDG Controls”.
NSAT #1999-0188-00 (121 HP 6030-IMP.014 R08C16) “Protective Relay Calibration”.
NSAT # 1999-0191-00 (121 HP 6030-IMP.355, Rev. 0, Change 3) “Check of 7.5 KVA Inverter Prior to Switching to Normal Source”.
NSAT # 1999-0193-00 (ICP-00193) “Setpoint Change to 12-VTA-310 for the High Temperature Alarm”.
NSAT # 1999-0209-00 (PMP-7030.OPR.001, Rev. 2, Change 1) “Operability Determination Procedure Changes”.
NSAT # 1999-0218-00 (PMI-2070, Rev. 14, Change 0) “Training and Qualification Procedure”.
NSAT # 1999-0235-00 (PMP-2070.600, Rev. 0, Change 0) “Training Administration and Qualification”.
NSAT #1999 0277-00 (PMP 1040.SES.001, Rev. 6) “Safety Screenings/Evaluation Procedure Changes”.
NSAT # 1999-0289-00 (12 IHP 6030.IMP 077, Rev. 0, Change 0) “Emergency Diesel Generator Watt Meter Calibration”.
NSAT # 1999-0539-00 (1 IHP 4030.SMP 129, Rev. 0, Change 8) “Source Range Nuclear Instrumentation Functional Test and Calibration”.
NSAT # 1999-0593-00 (ICP-00232, Rev. 0) “Setpoint Change for Differential Pressure Switch 2-LDA-155".
NSAT # 1999-0676-00 (12-DCP-316) “Supplemental AC Power System”.
NSAT # 1999-0692-00 (PMI-2294, Rev. 0) “Post Maintenance Test Program”.
NSAT # 1999-0755-00 (ICP-00237) “Instrument Change Package for 17-Ton CO2 Tank Pressure Switches”.
NSAT # 1999-0833-00 (2 IHP 6030.IMP 247, Rev. 10) “Reactor Coolant System Wide Range Pressure Protection Set II Calibration (Cold Over Pressurization)”.

NSAT # 1999-0927-00 (12 IHP 6030 IMP 073, Rev. 0, Change 2) “Time Delay Relay Calibration”.
NSAT # 1999-01515-00 (2EHP SP.109, Rev. 0) “Post Maintenance Testing of HFA Relays on Unit 2 CD Diesel Generator Controls”.
SS 1999-0641-00, “2IHP4030.STP.189, Revision 4, Change 3, Pressurizer Power Operated Relief Valve Cold Overpressurization Bistable Air Pressure System Functional Test,” dated July 8, 1999.
SS 1999-0052-00, “12 THP 6020 CHM.110, Rev 4, Chg 2, RCS Chemistry - Shutdown/ Refueling,” dated February 11, 1999.
SS 1999-0262-00, “12 EHP 4030 STP.308, Revision 2, Change 0, Boron Curve Update,” dated March 27, 1999.
SS 1999-0259-00, “Editorial change to FSAR Section 5.3 (line item #97),” dated March 26, 1999.
SS 1999-0132-00, “(2 Docs) PRZ Relief Valve Testing & Plant Cooldown from Hot Standby to Cld. Shtdn.,” dated February 26, 1999.
SS 1999-0604-00, “MHI 5080 - Control of Contractors, Revision 0,” dated July 2, 1999.
SS 1999-0892-00, “Safety Classification Determination,” dated August 30, 1999.
SS 1999-0811-00, “Revision 1 to 2IHP4030.STP.509, Residual Heat Removal Suction Valve Interlock Bistable Functional Test,” dated August 11, 1999.
SS applicable to 2IHP4030.SMP.206, Revision 2, “ΔT/Tavg Protection Set III Functional Test and Calibration,” dated January 14, 1999.
SS 1999-0695-00, “DG2AB Start & Load Rejections,” dated July 28, 1999.
SS#1999-0161-02 Potential USQ Related to RHR Vibration Induced Piping Crack.
SS#1999-0165-00 Substitution of Loctite 262 for Loctite Stud-Locke.
SS#1999-0824-00 Removal of Power to the South Spent Fuel Pool Pump Due to Installation of Temporary Modification.
SS#1999-0580-01 Operation of Containment Supplemental Cooling Systems.
SS#1999-0067-00 Containment Spray Additive Tank.
SS#1999-0904-00 Emergency Diesel Fuel Oil.
SS#1999-0198-00 Manual Mechanical Tube Plug Installation and Removal Procedure.
SS#1999-0166-00 Valve Replacement for 1-WDS-701-v2.
SS#1999-0260-00 Plugging of Existing Holes into the Unit 1 Containment Rear Access Doors.
SS#1999-0087-00 Addition of Belleville Washers to Actuators.
SS#1999-0106-00 Instrument Tubing for Root Shutoff Valve.
SS#1999-0112-00 Control Air Malfunction.
SS#1999-0821-00 Diesel Jacket Cooling Water.
SS#1999-0789-01 Starting Large Rotating Plant Equipment.
SS#1999-0789-00 Starting Large Rotating Plant Equipment.
SS#1999-0723-00 Servicing EDG Heat Exchanger Thermal Bypass Valves.
SS#1999-0379-00 Plant Air Compressor Maintenance.
SS#1999-0867-00 Periodic Performance Test.
SS#1999-0492-00 Bill of Material Procedure.

Audits and Self Assessments

Audit PA 99-S08 10 CFR 50.59 Restart Action Plan, September 21, 1999
Self-Assessment 10 CFR 50.59 Program, September 30, 1999
Engineering Issues Review Group Report, December 19, 1998
Self-Assessment 10 CFR 50.59 Program, August 11, 1999
Self-Assessment SA-1999-002-NFG, Engineering Dept. 10 CFR 50.59 Products, May 19, 1999
Self-Evaluation, Operability and Evaluations Report NQPE-98-01
Self-Evaluation, 10 CFR 50.59 Screening and Safety Evaluations Report NQPE-97-06